

## CLAIMS:

1. A method of reproducing a gray scale image in colors, in which method a color value (x, y) and a brightness (Y) are assigned to each shade of gray, characterized in that the assignment between shades of gray and brightness is monotonic and that the assigned color values are selected from the range (U) of a predetermined reference color ( $x_R$ ,  $y_R$ ).
- 5 2. A method as claimed in claim 1, characterized in that the reference color ( $x_R$ ,  $y_R$ ) is white.
3. A method as claimed in one of the claims 1 or 2, characterized in that different  
10 color values are assigned to each time two successive shades of gray.
4. A method as claimed in at least one of the claims 1 to 3, characterized in that the assignment between shades of gray and color values is bijective.
- 15 5. A method as claimed in at least one of the claims 1 to 4, characterized in that a recurrent series of  $m \leq n$  different color values ( $(x_1, y_1)$ , ...,  $(x_m, y_m)$ ) is assigned to the n shades of gray in an ascending order.
6. A method as claimed in at least one of the claims 1 to 5, characterized in that  
20 the reproduction of the gray scale image in colors takes place on a color monitor (6), the assignment between shades of gray on the one side and color values (x, y) and brightness (Y) on the other side being adapted to the dynamic range of the monitor.
7. A method as claimed in claim 6, characterized in that the rule of assignment  
25 between the shades of gray and the control of the primary colors of the color monitor (6) is stored in a look-up table (4, 5).
8. A method as claimed in claim 7, characterized in that the look-up table (4, 5) also takes into account the effect of the ambient brightness.

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9. A device for reproducing a gray scale image in colors, which device includes a transformation unit (3) which assigns a color value (x, y) and a brightness (Y) of the display to each shade of gray (2), characterized in that the transformation unit is arranged in such a manner that it is capable of carrying out a method as claimed in one of the claims 1 to 8.

10. A device as claimed in claim 9, characterized in that it includes a color monitor (6) for reproducing the gray scale image in colors, and that the transformation unit assigns the driving of the primary colors (R, G, B) of the color monitor to the shades of gray.

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